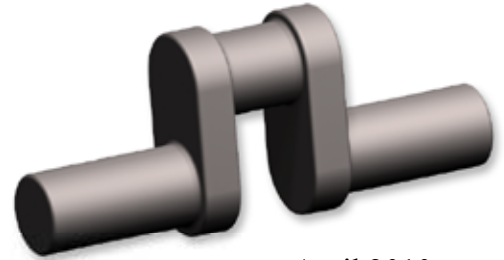


# **The Crank Calls**



April 2010

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**MEMBERSHIP**

**\$25.00 US**

Contact  
Ken Hurst at  
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**NEXT MEETING**

April 17, 2010 at  
Chabot College, **building 1500**  
25555 Hesperian Blvd, Hayward 94545  
Doors open at 9:00 AM  
Meeting starts at 10:00 AM

**Upcoming Events**

EDGE&TA 50<sup>th</sup> Anniversary National Show, June 24-27,  
Santa Margarita Ranch, CA [www.edgeta2010national.com](http://www.edgeta2010national.com)  
Annual WEME Show July 10 & 11 Veterans Building,  
Vallejo, CA  
Good Guys Car Show Aug 27-28-29

**MEETING NOTES**

Carl Wilson 03-20-2010

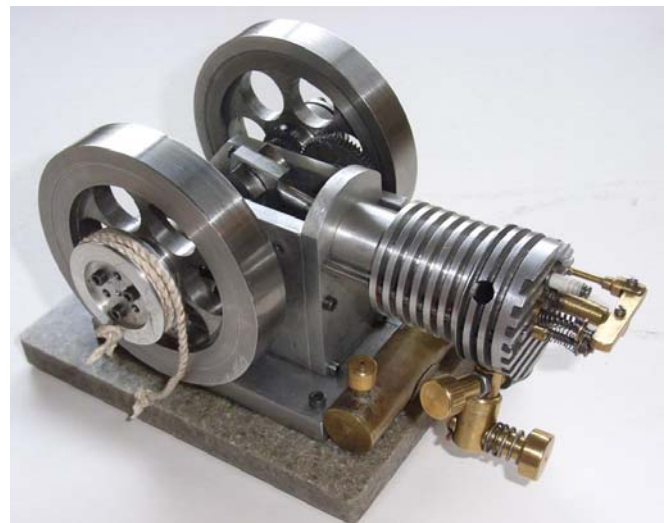
First Pop Honors were awarded to George Gravatt for his opposed piston engine; to Lou Chenot for the 8 cyl DOHC engine from his Duesenberg, and to Ron Colonna for his Novi engine.

Pat O'Connor talked about his visit to the Nebraska Tractor Test Laboratory. The great and sovereign State of Nebraska, as a service to its farmers, regularly tests tractors and implements to insure that they meet their specifications for performance and safety.

Mike Rehmus brought the WEME 2010 flyers and business cards, and the vinyl banner. He also noted that changes in the club and show web site are on hold due to the high cost of remodeling them.

**Bits and Pieces**

Mike Stimmann brought his Upshur back: it is now running but not super well. It still has rubber o-rings rather than cast iron. The 6v ignition coil from a car ignition was bought at NAPA auto parts.



Bob Kradjian noted that a good choice would be a coil for any 6v air cooled Volkswagen, say a 1957.



Close up of the Upshur head.



This Wall 15cc single is Bob Hettinger's first engine, made 40 years ago with castings from Cole's Power Models. It features ball bearings, internal scavenger type oil pump, and an external water pump.



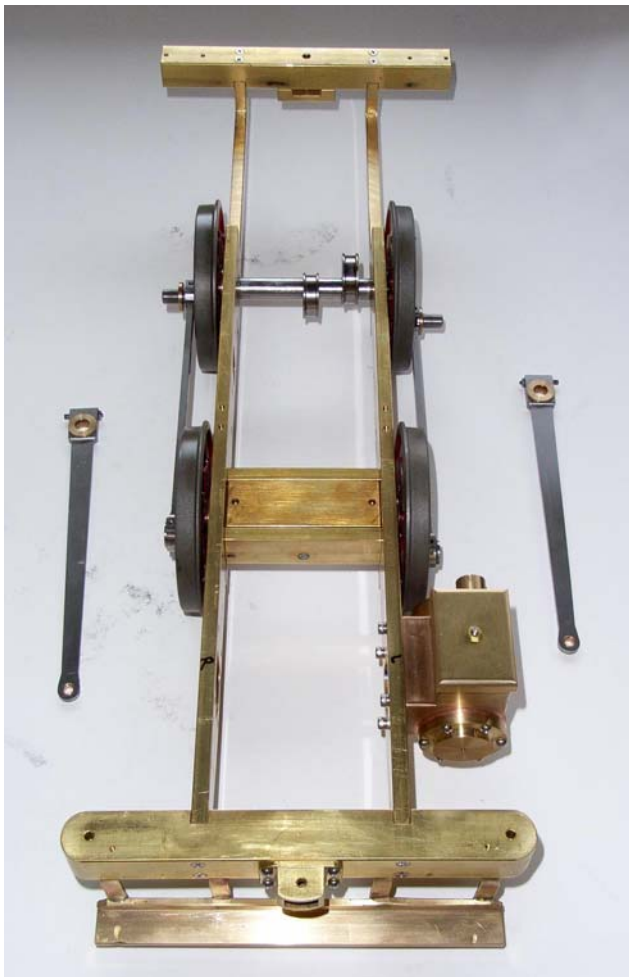
Close-up of the Wall 15cc single.



Carl Wilson's build of Radlett: the "WEME Show" engine designed and named by Malcolm Beak. The name is the small town in England in which Malcolm Beak was born.



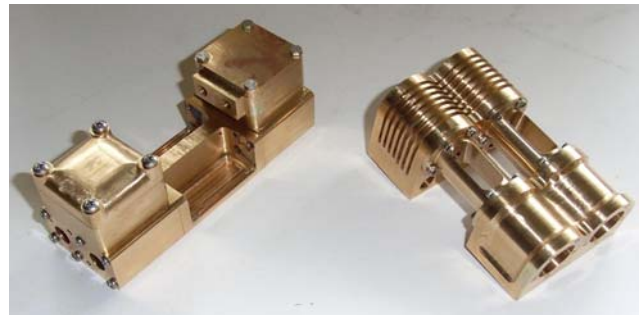
This is Dwight Gile's build of Radlett. The brass flywheel was turned from bar stock; the Zamak flywheel is the only successful casting from his aluminum permanent mold that was shown in last month's newsletter.



John Gilmore keeps on adding parts to his Pennsy A3 switcher designed by Kozo Hirakoa and published in Live Steam Magazine. In the top photo, the chassis is complete with wheels, axle boxes, side rods, main rods and one mounted cylinder. The lower photo shows one cylinder in parts.



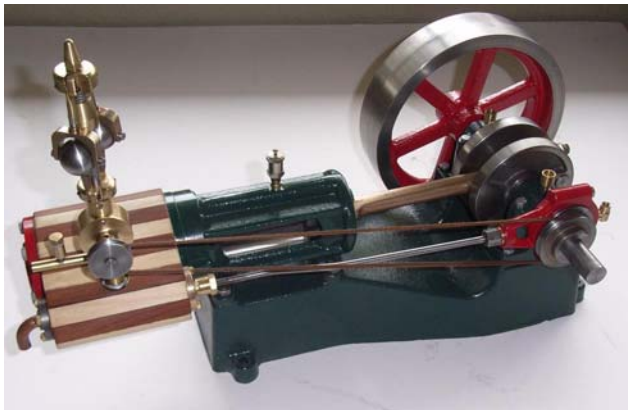
Peter Lawrence's low delta  $t$  Stirling engine will run- if he puts boiling water under the displacer and ice on the top. There are a few problems to fix: thermal short-circuit between the top and bottom plates and air leaks between the plates and the acrylic cylinder are possible reasons for the poor running.



On the left is Peter's Worthington duplex steam pump and on the right is his duplex air compressor.



Dwight Giles thought that George Gravatt's opposed piston engine needed a muffler. At the top is the tooling which Dwight used and below that the finished muffler. The material is .032" annealed and polished brass sheet which is formed in an arbor press.



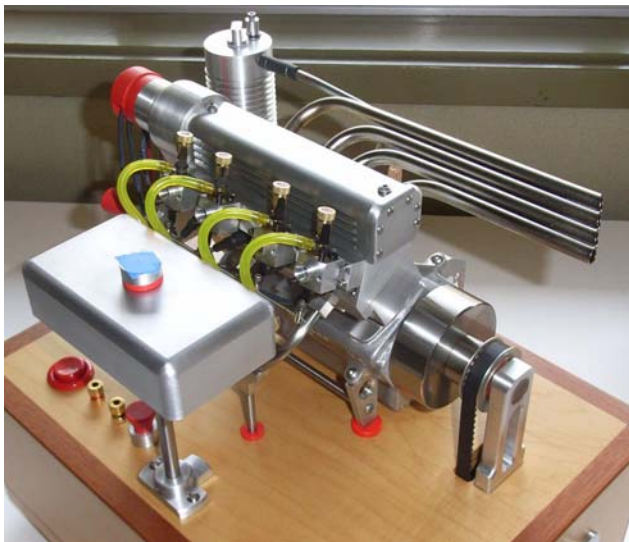
Jim Bove built this PM Research 1.5" bore x 2.5" stroke piston valve steam engine from castings. The centrifugal governor and steam valve is Jim's design. The wood strips on the cylinder are lagging. This engine is rated at .25 hp @ 60 psi.

The following 2 photos show Jaime Quevedo's Wallaby, a 2 cylinder IC engine designed by Edgar Westbury. This is one of three that he is building.





Jaime has received one of three sets of castings for the Cirrus aero engine which were made in Italy.



Dick Pretel has completed his SOHC Wall 4, one of a series of five engines to different layouts. Elmer Wall would be astounded at the variety of layouts that Dick has created! This one has his SOHC head on a Wall 3 block that is canted over by 30 degrees. Four single barrel carbs feed fuel to this magnificent engine.

## Tech Topic



Roy Anderson has extensive experience with lost wax casting of metal parts – he started 56 years ago making parts for Rollin Lobaugh – a well-known builder of 1/4" to the foot scale railroad stock. Roy made parts for Rollins Challenger – a 30 inch long monster - and parts for a Climax locomotive including the skew bevel gears, electric drive, and working couplers. He shared some of this experience with the club members. In the photos above you can see parts for bells, steam engines, switch points, and boat anchors.

In brief, the process consists of making the brass pattern, then a rubber mold from the pattern. After curing, the rubber is cut from the pattern and is then used as a mold for the wax patterns. The

waxes are mounted on a sprue to form a cluster, that is, several parts which are cast at the same time. The cluster is placed in a stainless steel flask and invested with a refractory plaster mix. The refractory is dried, the wax removed with steam, and the mold is ready for casting.

Roy used M70 manganese bronze exclusively: other brasses and bronzes with even a small amount of lead would form a tough scale when poured into plaster molds. Roy used either vacuum or centrifugal casting methods.



Roy made a rubber mold from a brass original of a hobo with a hole in his shoe and a toe sticking out of his sock. I asked Roy how he removed the pattern from the rubber mold – there is not an obvious parting line. Roy wrote:

“Looking at the casting, I would say that the mold started out as a block about 1 ¼” x 2” x 3”. It was a cut mold and the first cut came up the back over the head, to the left edge of the shoe, then down the center of the leg with the sock, then back up to the body and the sprue. Then there were deep cuts thru the center of the arms (but not separated from

the rest of the mold) so the mold could be opened to release the arms. Then more cuts to release the legs. As I remember it took at least three tries till I got a mold that would work and I could get 2 good waxes for every 4 or 5 I shot! It was not a money maker and we ended up giving them out to only our best customers!”

Additional note: The waxes are much softer than the brass pattern and must be extracted from the mold the same way as the brass. This makes a bit of a problem.

The dimensions of the hobo are:

Hat to posterior = 0.792”,

Elbow to elbow = 0.572”,

Back to toe = 0.788”

Roy recommends using Castaldo rubber:

[http://www.castaldo.com/english/usinprod/u\\_silicone.html](http://www.castaldo.com/english/usinprod/u_silicone.html)

It is available from Otto Frei:

<http://www.ottofrei.com/store/home.php>

More information on Rollin Lobaugh at:

<http://users.foxvalley.net/~osn/RollinLobaugh1995.htm>

### **For Sale**

Dynamite CNC mill \$1000,

Boyer-Schultz surface grinder \$1000,

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Stent grinder kit, lots of basic work done, \$300,

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Sears 10" table saw, \$100,

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